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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,399	03/16/2007	Sarah Michelle Lipman	POW2B-83992	8260
24201 7590 01/29/2011				
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EXAMINER				
XAVIER, ANTONIO J				
ART UNIT		PAPER NUMBER		
2629				
MAIL DATE		DELIVERY MODE		
01/20/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,399

Applicant(s)

LIPMAN ET AL.

Examiner

ANTONIO XAVIER

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2010.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,7-10,15,18,22,24-31,36-39,44,47,51 and 53-58 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 3-6,11-14,16,17,19-21,23,32-35,40-43,45,46,48-50 and 52.

DETAILED ACTION

Response to Declaration of Sarah M. Lipman under 37 C.F.R. §1.132

1. The declaration under 37 CFR 1.132 filed November 2, 2010 is **sufficient** to overcome the rejection of claims 1 and 30 based upon 35 U.S.C. §112.

Examiner notes the claims were rejected because the specification as filed did not appear to expressly support "a panel without an optical guide and scattering particles therein defining at least on edge; at least one detector arranged along said at least one edge of said panel... said panel being operative to transmit electromagnetic radiation from said at least one beam impinging thereon to said at least one edge thereof, for detection by said at least one detector" (emphasis added).

Examiner notes paragraphs 5, 6, 12, 13, 17 and 18 are taken as **admissions by the Applicant** that the claimed limitation regarding a panel without an optical guide and scattering particles being operative to transmit electromagnetic radiation from at least one beam impinging thereon to at least one edge is considered Applicant Admitted Prior Art (hereinafter referred to as "AAPA"). Specifically, Examiner notes paragraph 13 expressly states "the technology of a display panel without an optical guide and/or scattering particles **was known at the time** the application was filed" (emphasis added).

Response to Arguments

2. Applicant's arguments filed November 2, 2010 (hereinafter "Remarks") have been fully considered but they are not persuasive to overcome the rejections under 35 U.S.C. §103.

Official notice of Lambertian surfaces

On page 13 of the Remarks, "Applicants respectfully assert that the examiner's official notice that Lambertian surfaces are typically used to provide scattering effect is not based on common knowledge. As such, applicants respectfully request that the examiner produce documentary evidence pursuant to MPEP 2144.04(C)" (emphasis added). Examiner is not persuaded.

Examiner notes that MPEP § 2144.03(C) states:

"To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also Chevenard, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention."). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate. **If applicant adequately traverses** the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office action if the rejection is to be maintained. See 37 CFR 1.104(c)(2). See also Zurko, 258 F.3d at 1386, 59 USPQ2d at 1697 ("[T]he Board [or examiner] must point to some concrete evidence in the record in support of these findings" to satisfy the substantial evidence test). If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual

statements and explanation to support the finding. See 37 CFR 1.104(d)(2)" (emphasis added).

Examiner notes that **Applicant has inadequately traversed the official notice.**

Nevertheless, in the interest of compact prosecution, Examiner directs Applicant to Nayar et al. (WO 02/47395) and Nayar et al. (U.S. Pub. No.: 2004/0070565) teaching a Lambertian surface and periphery detectors.

Furthermore, Examiner notes the specification as filed appears to contain no details regarding a Lambertian surface other than a reference using the term "Lambertian surface" itself. If Applicant maintains a position that a Lambertian surface is not well known in the art then Examiner strongly suggests that Applicant provide specific support in the specification as filed to overcome potential 35 U.S.C. §112 issues regarding the usage of a Lambertian surface.

Impermissible hindsight

On page 13 of the Remarks, Applicant argues "the suggestion of using a Lambertian surface in combination with a non-scattering panel came from applicants' own specification (page 18, lines 27-28). As the examiner is aware, taking the suggestion to use a Lambertian surface from the applicants' own disclosure is **impermissible hindsight**" (emphasis added). Examiner is not persuaded.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In the interest of compact prosecution, Examiner notes Nayar et al. (U.S. Pub. No.: 2004/0070565) Figs. 5 and 17-24 teach a Lambertian surface in contact with a display to scatter light to peripheral sensors. Examiner directs Applicant to Fig. 5, items 506 and 508 and paragraphs [0109]-[0113]. Examiner notes one of ordinary skill in the art would be motivated to use this type of light detection to maintain visual resolution of the display.

Contrary to conventional or accepted wisdom

On pages 13-14 of the Remarks, Applicant argues "it was not known to use the Lambertian surface to scatter light to be detected by an edge sensor as presently claimed. Applicants, by using scattered light at the edge of the panel, were proceeding contrary to conventional or accepted wisdom, which is evidence of nonobviousness." Examiner is not persuaded.

Examiner notes Nayar et al. (U.S. Pub. No.: 2004/0070565) Figs. 5 and 17-24 teach a Lambertian surface in contact with a display to scatter light to peripheral

sensors. Examiner also directs Applicant to paragraphs [0109]-[0113]. Examiner notes one of ordinary skill in the art would be motivated to use this type of edge detection to maintain visual resolution of the display.

3. Applicant's remaining arguments have been fully considered but they are not persuasive. Furthermore, the common knowledge or well-known in the art statements presented in the prior office action are now taken to be admitted prior art because Applicant either failed to traverse the Examiner's assertion of official notice or the traversal was inadequate, as discussed above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 7-9, 15, 18, 22, 24-27, 29-31, 36-38, 44, 47, 51, 53-56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa et al. (U.S. Pat. No.: 4,320,292) in view of Lipman et al. (WO 03/104965).

With respect to Claim 1, Oikawa teaches an interface apparatus comprising:
a panel defining at least one edge (Figs. 1, 2 and 6-11);
at least one detector arranged along said at least one edge of said panel (Fig. 1, items 13 and 14 and Figs. 6-7, items 68); and
an electromagnetic radiation beam emitter operative to direct at least one beam of electromagnetic radiation onto said panel from a variable distance and at a variable angle (Figs. 1-3 and 7 and Col. 6, lines 49-51);

said panel being operative to transmit electromagnetic radiation from said at least one beam impinging thereon to said at least one edge thereof, for detection by said at least one detector (Figs. 1, 2 and 6-11 and Col. 3, lines 28-46 teach the light from the input device is scattered and detected at the edges), said panel being operative to attenuate said electromagnetic radiation passing there through to said at least one edge as a function of the distance traveled by the electromagnetic radiation through the panel (Col. 3, line 65. Examiner notes that the light inherently attenuates as a function of time and distance traveled), whereby said at least one detector is operative to provide at least one output (Col. 3, lines 34-52).

However, Oikawa fails to expressly teach an output usable to determine said variable distance and said variable angle (emphasis added).

Lipman teaches a light pen system to receive at least one output and to determine said variable distance and variable angle (p.7, line 23-p.8, line 24). It would have been obvious to one of ordinary skill in the art to modify the detection system of Oikawa to include the stylus and angle detection of Lipman to provide advanced

functionality resulting in an intuitive and responsive user interface (Lipman, p. 5, line 10).

Oikawa in view of Lipman teaches an interface apparatus to determine variable distance and angle of an input device. However, Oikawa in view of Lipman fails to expressly teach a panel without an optical guide and scattering particles therein (emphasis added).

Examiner takes official notice that Lambertian surfaces are well known in the art. Examiner notes Lambertian surfaces are typically used provide a scattering effect. Oikawa in view of Lipman teaches a device which is different from the claimed interface apparatus by the substitution of the step(s) of a panel without an optical guide and scattering particles therein. Official notice teaches the substituted step(s) of a Lambertian surface and their functions were known in the art to provide a scattering element to reflect and diffuse electromagnetic radiation.

The optical guide and scattering particles of Oikawa in view of Lipman could have been substituted with an optical guide in conjunction with a Lambertian surface as taught by Official notice and the results would have been predictable and resulted in a panel without an optical guide and scattering particles therein with detectors arranged along the edge of said panel. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

With respect to Claim 2, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and wherein said panel is selected

from a group consisting of: a display, a mobile telephone display panel, a hand-held computing device display panel, a television panel and an input pad panel (Oikawa, Fig. 1, Abstract and Col. 9, lines 17-20).

With respect to Claim 7, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and wherein said at least one detector comprises a substantially linear array of detectors (Oikawa, Fig. 1).

With respect to Claim 8, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and wherein said at least one detector is capable of detecting said electromagnetic radiation at predetermined frequencies in at least one of visible and non-visible ranges (Oikawa, Col. 6, lines 49-51 teach the light source is an infrared ray. Examiner notes that a detector designed to detect an infrared ray inherently teaches detection of electromagnetic radiation at a predetermined frequency in non-visible ranges. Examiner further notes that the predetermined frequency in the claim as written is not defined and the group including at least one of visible and non-visible ranges reads on all electromagnetic radiation).

With respect to Claim 9, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and wherein said electromagnetic radiation beam emitter is operative to provide at least one of a substantially conical beam (Oikawa, Fig. 2 teaches a conical beam and Col. 6, line 53 teaches a conical tip),

at least one substantially collimated beam, at least one beam having a substantially asymmetrical cross section, at least one beam having a substantially pyramidal shape and at least one beam having a substantially polygonal cross section.

With respect to Claim 15, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and wherein said electromagnetic radiation beam emitter is operative to provide at least one of a modulated beam, a beam of visible light and a beam of non-visible electromagnetic radiation (Oikawa, Col. 6, lines 49-51).

With respect to Claim 18, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and also comprising detector output processing circuitry operative to receive at least one output of said at least one detector and to provide an output indication of at least one of location, orientation, shape and size of at least one impingement spot defined by impingement of said at least one electromagnetic radiation beam on said panel (Oikawa, Col. 3, lines 34-52).

With respect to Claim 22, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, and also comprising detector output processing circuitry operative to receive at least one output of said at least one detector and to provide an output indication of at least one of the location and angular orientation of said electromagnetic radiation beam emitter (Lipman, p.7, line 23-p.8, line 26).

The further limitations of Claims 24-26 are rejected for substantially the same reasons as Claim 22, discussed above.

With respect to Claim 27, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above, wherein impingement of said beam on said panel provides a substantially elliptical impingement spot (Oikawa, Fig. 2 and Col. 6, line 53 teach a conical shaped beam. Examiner notes that a conical shaped beam provides a substantially elliptical impingement spot, particularly when the beam is at an angle).

With respect to Claim 29, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above and comprising analysis circuitry operative to employ detected variations in intensity of said electromagnetic radiation at different locations on an impingement spot defined by impingement of said beam on said panel, thereby to assist in determination of an angle of intersection between said beam and said panel (Lipman, p.7, line 23-p.8, line 24).

With respect to Claim 30, Oikawa teaches an interface method comprising: providing a panel defining at least one edge (Figs. 1, 2 and 6-11), at least one detector arranged along said at least one edge of said panel (Fig. 1, items 13 and 14 and Figs. 6-7, items 68) and an electromagnetic radiation beam emitter operative to direct at least

one beam of electromagnetic radiation onto said panel from a variable distance and at a variable angle (Figs. 1-3 and 7 and Col. 6, lines 49-51);

directing said beam of electromagnetic radiation from said electromagnetic radiation beam emitter onto said panel, thereby producing at least one impingement spot (Figs. 1, 2 and 7 and Col. 3, lines 28-46 teach the light from the input device is directed onto the panel producing at least one impingement spot and then scattered and detected at the edges);

employing said panel to transmit electromagnetic radiation from said at least one impingement spot to said at least one edge thereof (Figs. 1, 2 and 6-11 and Col. 3, lines 28-46 teach the light from the input device is scattered and detected at the edges), said panel being operative to attenuate said electromagnetic radiation passing therethrough to said at least one edge as a function of the distance traveled by the electromagnetic radiation through the panel (Col. 3, line 65. Examiner notes that the light inherently attenuates as a function of time and distance traveled);

detecting, by said at least one detector, said electromagnetic radiation transmitted by said panel to said at least one edge (Col. 3, lines 34-52);

However, Oikawa fails to expressly teach employing an output of said at least one detector to determine said variable distance and said variable angle (emphasis added).

Lipman teaches a light pen system to receive at least one output of said at least one detector and to determine said variable distance and variable angle (p.7, line 23-p.8, line 24). It would have been obvious to one of ordinary skill in the art to modify the

detection system of Oikawa to include the stylus and angle detection of Lipman to provide advanced functionality resulting in an intuitive and responsive user interface (Lipman, p. 5, line 10).

Oikawa in view of Lipman teaches an interface method to determine variable distance and angle of an input device. However, Oikawa in view of Lipman fails to expressly teach providing a panel without an optical guide and scattering particles therein (emphasis added).

Examiner takes official notice that Lambertian surfaces are well known in the art. Examiner notes Lambertian surfaces are typically used provide a scattering effect. Oikawa in view of Lipman teaches a method which is different from the claimed interface method by the substitution of the step(s) of providing a panel without an optical guide and scattering particles therein. Official notice teaches the substituted step(s) of a Lambertian surface and their functions were known in the art to provide a scattering element to reflect and diffuse electromagnetic radiation.

The optical guide and scattering particles of Oikawa in view of Lipman could have been substituted with an optical guide in conjunction with a Lambertian surface as taught by Official notice and the results would have been predictable and resulted in providing a panel without an optical guide and scattering particles therein with detectors arranged along the edge of said panel. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

The further limitations of Claims 31, 36-38, 44, 47, 51, 53-56 and 58 are rejected for substantially the same reasons as Claims 2, 7-9, 15, 18, 22, 24-27 and 29, discussed above.

6. Claims 10, 28, 39 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa in view of Lipman and further in view of Applicant admitted prior art (hereinafter referred to as "AAPA").

With respect to Claim 10, Oikawa in view of Lipman teaches the interface apparatus according to Claim 1, discussed above. However, Oikawa in view of Lipman fails to expressly teach wherein said electromagnetic radiation beam emitter is operative to provide a plurality of beams.

AAPA teaches providing a plurality of beams (based on prior official notice). It would have been obvious to one of ordinary skill in the art to modify the light pen of Oikawa in view of Lipman to provide a plurality of beams as taught by AAPA to improve the functionality and versatility of the overall system.

With respect to Claim 28, Oikawa in view of Lipman teaches the interface apparatus according to Claim 27, discussed above, and also comprising analysis circuitry operative to determine the elliptical eccentricity of the light incident on the display and determining an angle of intersection between said beam and said panel

(Lipman, p.7, line 23-p.8, line 24). However, Oikawa in view of Lipman fail to expressly teach determining a ratio of a major axis and a minor axis of said elliptical impingement spot.

AAPA teaches the equivalence of using the major/minor axis of said elliptical impingement and Lipman's calculation of the elliptical eccentricity for their use in determining an angle of intersection (based on prior official notice). Examiner notes that the selection of any of these known equivalents would be within the level of one of ordinary skill in the art.

The further limitations of Claims 39 and 57 are rejected for substantially the same reasons as Claims 10 and 28, discussed above.

Pertinent Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. Nishino (U.S. Pub. No.: 2002/0097222), Fan (U.S. Pat. No.: 5,926,168), Lee (U.S. Pub. No.: 2003/0107748), Usuda et al. (U.S. Pat. No.: 6,437,314) and Sibert et al. (U.S. Pat. No.: 6,184,863) teach a panel without an optical guide or scattering particles in conjunction with optical/laser input and peripheral sensors;

- b. Buermann et al. (U.S. Pub. No.: 2005/0133700), Xie et al. (U.S. Pub. No.: 2005/0024336) and Kimura (U.S. Pub. No.: 2001/0038065) teach Lambertian surfaces and how light is scattered; and
- c. Nayar et al. (WO 02/47395) and Nayar et al. (U.S. Pub. No.: 2004/0070565) teach a Lambertian surface with peripheral sensors.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTONIO XAVIER whose telephone number is 571-270-7688. The examiner can normally be reached on M-F 6:30am-12:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. X./
Examiner, Art Unit 2629

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629